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ABSTRACT

A study examined the reading problems of adults in Newfoundland (Canada) with low reading ability. It explored the genesis of these problems through a retrospective analysis of their lives as school children; and determined the relationship between literacy development and personal background factors, school factors, physiological factors, and psycholinguistic factors. Subjects, 57 adult volunteers from 18 to 63 years old, were administered the reading subtest of the Tests of Adult Basic Education and measures of seven additional indicators of reading (sight vocabulary; listening vocabulary; reading strategies; word analysis; visual perception and memory ability; auditory aptitude; and Auditory-Visual-Memory aptitude). Of the subjects, 27 were in Adult Basic Education, Basic training Skills Development, life skills development, or were studying such areas as autobody repair and commercial cooking. The remaining 30 subjects were male inmates at Her Majesty's Penitentiary in St. Johns, Newfoundland (Canada). A 68-item background questionnaire was also administered. Results indicated that reading problems for most of the adults in the sample seemed identifiable through standard diagnostic techniques, and that physiological factors were not significant indicators of either listening vocabulary or reading comprehension. Findings offer little support for conventional sociological models of literacy attainment and virtually no support for the attitude models of literacy attainment. (Several unnumbered tables of data are included.) (Contains 16 references.) (RS)

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Characteristic Reading Problems of Adult Illiterates

Mona Beebe

Report Number 3

Summary Reports of Paths to Literacy and Illiteracy in Newfoundland and Labrador

Linda M. Phillips and Stephen P. Norris (editors)

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PURPOSE

This study examines the reading problems of adults with low reading ability; explores the genesis of these problems through a retrospective analysis of their lives as school children; and determines the relationship between literacy development and personal background factors, school factors, physiological factors, and psycholinguistic factors.

To date, many have assumed that illiterate adults do begin to read like children and, consequently, adult literacy programmes have often been based on models designed explicitly for young children (Davidson & Wheat, 1989), such as the Chall (1983) model. Such programmes have not always met with success, perhaps in part because students' individual needs were not assessed. A drop-out rate of more than 50% for low achieving adult illiterates (Fagan, 1987) clearly indicates that programmes are not always meeting the needs of adult learners. This conclusion is supported by studies of adult literacy programmes in the United States that show virtually no progress by the adults enrolled in them.

It was suggested by Kavale and Lindsey (1977) and by Kazemek and Rigg (1984) that one significant factor contributing to this lack of success is the paucity of information on the nature of the reading processes of adults. In support of this statement, Hall and Coley (1975) pointed out that, while reading instruction is a major concern of adult basic education, little attention is paid to understanding reading instruction for adults. In the decade following that statement, notable research in the area was done by Malicky and Norman (1982, 1987), but even they point to the lack of information on how adults read. The research reported here should provide further information for this slowly developing area of concern that might be useful in tailoring programmes to individual adult's needs.

METHOD

The Sample

The sample consisted of 57 volunteer adults, from 18 to 63 years old. Twenty-seven of the subjects were in Adult Basic Education, Basic Training Skills Development, life skills development, or were studying such areas as autobody repair and commercial cooking. Classes were offered at one of two sites of the Avalon Community College in eastern Newfoundland. Many participants were referred and sponsored by some external agency such as the Canada Employment and Immigration Commission, Social Services, or the Workers' Compensation Commission.

The remaining 30 subjects were male inmates at Her Majesty's Penitentiary in St. John's, a low to medium security prison for men. Eleven inmates participated in upgrading classes offered by the Avalon Community College in the prison school, or were using computer programmes designed to teach upgrading skills. Nineteen inmates were not participating in any upgrading programme.

Measures of Reading Literacy

The reading subtest of the Tests of Adult Basic Education (TABE, 1987) was used as an eligibility screen. Subjects were selected whose reading level was less than high school but sufficient to read the words on an oral reading passage to be used later in testing. An additional seven indicators of reading were used in order to gain information on the kinds of problems that subjects might encounter while reading. The indicators are used typically with children. In the absence of indicators for adults, the ones for children were used, since the underlying skills of reading are the same for both groups.

- *Sight Vocabulary* - The Slosson Oral Reading Test (Slosson, 1963) was used to measure ability to recognize words by sight. It requires subjects to pronounce isolated words at different levels of difficulty.

- *Listening Vocabulary* - The Peabody Picture Vocabulary Test-Revised, Form L (Dunn & Dunn, 1981) was used to measure receptive vocabulary. The test contains 175 items arranged in order of increasing difficulty. Subjects are required to select from four simple black and white pictures the one that gives the best response to a direction given by the investigator (e.g., "show me the truck").

- *Reading Strategies* - Subjects were required to read

aloud two passages from the Bader Reading and Language Inventory (Bader, 1983). The first passage deals with drivers license requirements and the second with completing job applications. Both topics were presumed to be familiar to adults. Subjects were informed before reading that they would be asked to retell the content and to answer questions about the passages when they finished reading.

• *Word Analysis* - Three subtests of the Bader Reading and Language Inventory were used to assess subjects' knowledge of phonics and word analysis. Blending sounds, and recognizing prefixes and suffixes were some of the skills assessed.

• *Visual Perception and Memory Ability* - The Revised Visual Retention Test (Benton, 1974) was used to assess visual perception and visual memory. The test consists of ten designs with one or more figures. Subjects are shown a card for 10 seconds and then are requested to draw what they have seen.

In order to assess the ability to remember letter sequences, subjects were given the Visual Attention Span for Letters subtest of the Detroit Tests of Learning Aptitude (Baker & Leland, 1967). Sets of two to seven letters are exposed for one second per letter. Subjects are required to recall the letters in the exact order they are shown.

• *Auditory Aptitude* - Three tests were used to assess subjects' auditory abilities. The Auditory Attention Span for Related Words subtest of the Detroit Tests of Learning Aptitude was used to assess ability to listen to words in context and to repeat what is heard. Sentences of increasing length and complexity are read to subjects who are then requested to repeat verbatim each sentence.

The Auditory Attention Span for Unrelated Words subtest of the Detroit Tests of Learning Aptitude was administered as a further test of memory. For this test, sets of two to eight unrelated words are read aloud and the subject repeats as many as possible.

The Auditory Analysis Test (Rosner & Simon, 1971) was administered to assess subjects' linguistic awareness of phonemes, the sounds within words. The task requires a subject to say a word without a specified syllable or phoneme (e.g., "Say smile without the /s/").

• *Auditory-Visual-Memory Aptitude* - The Oral Directions subtest of the Detroit Tests of Learning Aptitude was used to assess subjects' ability to listen to a set of instructions, remember them, and carry out directions to mark pictures and diagrams in particular ways.

Background Questionnaire

A questionnaire was administered to identify possible sources of participants' literacy problems. The questionnaire had 68 items in the following categories:

• *Schooling* - This section has 26 items designed to provide data on such things as number of years of schooling, reasons for leaving school, attendance in special education classes, and attitudes and beliefs about school.

• *Perceptions of reading* - This section has 8 items on perceptions of the characteristics of good readers, and perceptions of how well subjects did in reading and in school generally.

• *Organic problems* - The 5 items in this section ask whether subjects had physical or perceptual problems that could have interfered with learning to read. Questions asked included whether they wore eye glasses, whether they had frequent earaches, and whether they confused letters when reading and writing.

• *Psychological and behavioral situations* - The 3 items in this section were designed to identify any experiences during the subjects' school years that may have affected their ability to learn. Questions were asked about such events as the death of family members, severe family conflict, and family break-up.

• *Family* - This section poses 13 questions about the home environment in which subjects were raised. One set of questions asked about opportunities for learning that were provided in the home, such as whether there was a place to do homework, and whether library books were brought home. A second set asked about family stability. For example, subjects were asked whether there was always sufficient

food to eat, whether they were allowed to eat a lot of "junk" food, and whether their fathers took an interest in the day-to-day functioning of the family. The third set posed questions about such things as parental education, television watching, reading habits, and about parents' ability to read.

• *Community* - The 8 questions in this section ask about such things as the size of the community in which the subjects lived, the number of schools they attended, and whether they ever had lived outside of Newfoundland and Labrador.

• *Personal information* - The 5 questions in this section ask for date of birth, and about dependent children and marital status.

Note that the questionnaire deals with many issues that require participants to retrospect. This retrospection involves an unknown element of error in memory reconstruction and in contamination of memory by events that intervened between the participants' childhood and adulthood. This unreliability of the data must be kept in mind at all times when interpreting the results of this study and other studies that rely upon retrospection.

RESULTS

Personal Background Factors

Family problems:

money was a problem	70%
drinking was a problem	37%
quarrelling was a problem	35%
never had family outings	26%

Experiences:

	During grades k-6	7-12
family break-up	16%	12%
family conflict	32%	23%
wife battering	26%	14%
physical abuse	25%	19%
put-downs	32%	19%
welfare	37%	21%
family unemployment	42%	28%

Parental encouragement:

expected to finish high school	61%
expected to do some high school	16%
encouraged to do well in school	75%
provided with help at home	60%
felt there was someone at home able to help	79%

Parental education:

father could not read at all	25%
mother could not read at all	9%
father had elementary education only	58%
mother had elementary education only	46%

Many of the subjects reported coming from families with one or more sources of stress, particularly when they were in the early grades. While many of the subjects' parents had low or no literacy, most subjects reported being encouraged to do well in school and to finish at least high school. Thus, based on these recollections, there are forces working both to foster and to impede literacy development.

School Factors

Attendance:

frequently absent from school	44%
many absences from school	18%
average number of years in school	9.3
proportion in school for at least 7 years.	75%
average last grade completed	6.6
average number grades repeated	1.8
proportion repeating at least one grade	68%
average school leaving age	15.5
proportion leaving between 13-15 years	51%

Special Education:

in special education sometime	47%
average years in special education	2.4
proportion spending at least one year	89%
proportion never rejoining mainstream	67%
proportion successful after rejoining	44%

Attitudes, beliefs, and treatment:

learned less than others in school 49%
liked in school 53%
frequently felt discouraged in school 30%
frequently in trouble in school 21%
liked to go to school 53%
never felt successful 35%
felt no one ever cared 21%
never felt important 42%
tense and nervous in school 30%
often hit as punishment in school 18%
sometimes hit as punishment in school 44%
often ridiculed in school by teacher 11%
sometimes ridiculed in school by teacher . . . 44%
never helped by teacher to do best in school . 14%
only sometimes helped to do best in school . 39%

The information on schooling paints a generally negative picture. Subjects reported being frequently absent from school, and experiencing a high rate of failure. Furthermore, almost one-half of the subjects spent some time in special education, and, of these, only about one-third returned to the mainstream. Dropping out, even before legal school leaving age, was common.

Physiological Factors

good or excellent general health 91%
health problems or physical handicap 9%
had to sit at front to see board 26%
problems with earache 37%
sometimes had trouble hearing 26%

Assuming the accuracy of these reports, it is doubtful that physiological factors would have impeded literacy development in many of the participants.

Psycholinguistic Factors

Sight word ability:

average grade level 6.7
proportion at junior high level 54%
proportion below grade 5.5 level 19%

Listening vocabulary:

average grade level 5.8
proportion at junior high level 35%
proportion below grade 4 level 9%

Visual perceptual and visual memory:

proportion above average 60%
(Only 5% scored in the range that would cause difficulties)

Visual attention for letters:

average (max. attainable = 16 years) . . . 12 years
proportion below junior high level 53%
proportion above junior high level 16%

Auditory attention for related words:

average (max. attainable = 16 years) . . . 12 years
proportion below junior high level 47%
proportion above junior high 7%

Auditory attention for unrelated words:

average (max. attainable = 14 years) . . 9.9 years
proportion below junior high (12 years) . . . 70%
proportion at junior high (test ceiling) 30%
proportion below grade 4 (9 years old) 37%

Auditory analysis:

average 55%

Word analysis:

(Blends)
average (Blends) 74%
average (Prefixes) 92%
average (Suffixes) 82%

The results for psycholinguistic abilities show that the subjects' ability to read words by sight and their ability to derive meaning from words were very low -- no better than average children in upper elementary school. Subjects for this sample were reasonably good at breaking words into parts for word identification purposes. This was indicated by high scores on

the blends, prefixes, and suffixes tests, and it was also apparent during the oral reading component of the testing. This also indicates that there were more words whose identity subjects knew than whose meaning they knew.

Reading Comprehension

average grade level	5.8
proportion at junior high level	25%
proportion below grade 5.5 level	47%

Subjects' ability to derive meaning from whole text was also less than their ability to recognize words by sight. Their reading comprehension, like other measures of literacy, was no better than upper elementary school children.

Personal Background and Literacy

Conventional wisdom holds that parents' literacy, the social and economic status of the family, and family stability have a substantial effect on learning to read and on the amount of reading done in the home. However, this was not the case for the subjects in this sample. Analysis of the data indicated that these factors had no significant effect on either reading comprehension or the amount of home reading. Furthermore, there was no correlation between reading activity in the home and reading comprehension ability. This is surprising since home reading is believed to enhance the child's initial success with reading.

It is plausible to assume that the more children are encouraged to do well in school and the better the learning environment in the home, the higher will be their literacy. In turn, the amount of encouragement parents give to their children is plausibly affected by a variety of factors. We found that among four factors that might lead to greater encouragement, the parents' literacy level had the strongest effect.

We considered the effects of home learning environment and parents' encouragement and punishment on reading comprehension and listening vocabulary. It seems reasonable to assume that the better the home learning environment, the more encouragement, and the less punishment, the better would be children's reading and vocabulary. However, none of the predicted effects were found.

Home learning environment, social and economic status, parental encouragement, and parental literacy were studied for their effect on placement in special education. None of the factors had an effect.

No correlation was found to exist between special education and reading ability. This means that being in special education did not improve students' reading ability. However, the reason most commonly given for being placed in special education (25 out of 27 times in the sample of subjects) was that subjects had fallen behind in their work because of poor reading.

School Attitudes and Beliefs and Literacy

It was found that school satisfaction had a significant negative effect on both reading comprehension and listening vocabulary. Subjects who scored highest on reading and vocabulary had liked school the least. These findings are the reverse of what one might expect, but are congruent with findings from other studies done in Newfoundland and Labrador on students in grades four, eight, and ten. Better achieving students tend to voice more dissatisfaction about school.

Physiology and Literacy

Hearing and sight were examined for their effects on listening vocabulary and reading comprehension. Neither hearing nor sight had significant effects on either outcome.

Psycholinguistics and Literacy

One concern under this topic is the relation between listening vocabulary and sight vocabulary and reading comprehension. A significant relationship was found to exist between listening vocabulary and reading comprehension. Sight vocabulary was not related.

Another idea involves an additional indicator of reading comprehension, sentence comprehension. The purpose of including this indicator was to establish whether it was just the meaning of words that was important, or whether it was also important to understand the meaning of longer semantic and syntactic elements. In this model, all three indicators (listening vocabulary, sight vocabulary, and sentence comprehension) made significant contributions to reading

comprehension, but listening vocabulary was by far the most important. Thus, in the presence of sentence comprehension, sight vocabulary takes on a more important role, because understanding the meaning of a sentence is dependent partly on the ability to pronounce most of the words in the sentence.

CONCLUSIONS

These analyses offered little support for conventional sociological models of literacy attainment. As well, there was virtually no support for the attitude models of literacy attainment.

Since physiological factors were not significant indicators of either listening vocabulary or reading comprehension, one might be led to wonder whether orthodox theorizing accounts at all for adult poor readers. It is therefore reassuring to find that orthodox psycholinguistic theory has powerful explanatory and predictive value. This is encouraging, since the models without explanatory force (sociological models, attitude models, and physiological models) concern factors that are not manipulable by remedial teachers or instructors in adult basic education programmes. On the other hand, the factors that are the focus of the psycholinguistic models are manipulable, once they have been identified on a case-by-case basis.

Reading problems for most of the adults in the sample seemed identifiable through standard diagnostic techniques. (The caution is that the techniques used were developed for nonadults). Once identified, the problems should be amenable to remedial teaching techniques. Unfortunately, almost without exception, the instructors in adult basic education programmes lack the theoretical knowledge of reading processes, and the necessary skills, expertise, and resources to diagnose needs and to offer effective remediation to adults with reading problems (Brown, 1992). Also, unfortunately, knowledge of adult learning is less fully developed than of child learning, and this hampers progress.

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